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AUTHOR Peters, Richard O.
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ABSTRACT

Several instructional strategies have been developed and employed to affect student awareness of natural and social environmental settings. Three instructional strategy orientations have been structured for affecting student conceptual learning and values acquisition-clarification: affective, cognitive, and affective-cognitive. Outdoor education is an instructional strategy which exposes students to environmental settings in an attempt to develop their awareness and appreciation of total life-space phenomena. This paper discusses strategies representing both direct and vicarious instructional activities for students in grades K-12. These are: (1) the Learning Laboratory; (2) the Mobile Classroom; (3) sound film and video tape simulations; (4) games and simulations; and (5) field, hiking, and camping trips. A list of 35 reference materials pertaining to these strategies is also given. (NQ)

STRATEGIES TO AFFECT STUDENT AWARENESS OF NATURAL AND SOCIAL ENVIRONMENTS IN OUTDOOR EDUCATION: A RESOURCE GUIDE

RICHARD O. PETERS, ED.D.
RFD # 2
Lancaster, New Hampshire 03584

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INTRODUCTION

During the past decade, there have been several instructional strategies developed and employed in an attempt to affect student awareness of natrual and social environmental settings .

There are three classifications of instructional strategy orientations; affective, cognitive, and affective-cognitive, which have been structured for purposes of affecting student conceptual learning and values acquisition-clarification .

As defined, outdoor education is an instructional strategy which exposes students to environmental settings, either directly or vicariously, in an attempt to develop their awareness and appreciation of total life-space phenomena .

The strategies to be discussed on the following pages represent both direct and vicarious instructional activities which can be used with students at any point along the K - 12 continuum .

STRATEGIES.

A. THE LEARNING LABORATORY

An outdoor education learning laboratory is a physical site area that lends itself to the discovery-learning process wherein students can:

1. conduct nature studies (e.g., soil erosion, geology, food sources)
2. become involved in hiking and camping trips
3. involve themselves in ecological research projects (e.g., air and water pollution, seasonal undergrowth, animal migration) .

There are several program advantages to having a learning laboratory facility:

1. a permanent activity-oriented program can be established and made an intregal part of an outdoor education program .
2. student exposure to and direct involvement with aspects of the natural environment can be controlled and incorporated into the learning process .
3. a variety of learning and leisure-time experiences can be made available to students in a natural environmental setting .
4. the facility can double as a teacher in-service outdoor education training center .

The learning lab should be utilized year around . The use of the site, twelve months a year, lends the area to comparative-longitudinal studies . Students are thus able to monitor site characteristics and phenomena during the four seasons of the calendar year and are provided the opportunity to study the process of adaptation and change that occurs from January through December .

A site survey should be conducted in order to identify the natrual characteristics of the area . Each site characteristic (referred to as a station) should compliment both student

activities and experiences as well as concept development . Thus:

1. clearings
2. hills and mountains
3. wooded areas
4. ground vegetation
5. streams, ponds, marshes, and lakes
6. transitional zones . . . should be cataloged and incorporated into the instructional program . Each and every site phenomenon possesses unique characteristics which can compliment and enrich an outdoor education study .

While few alterations of the site area are recommended, certain activities should be conducted and certain facilities provided for those who will use the laboratory setting .

1. Avenues of access (e.g., roadways, hiking trails, bike paths) should be developed and maintained .
2. Sanitation facilities should be constructed at convenient locations .
3. Shelter areas should be cleared and structures erected (e.g., lean-tos, roofed shelters) .

B. MOBILE CLASSROOM

A truly mobile classroom should be referred to as an educational research development and instructional unit that is equipped with 8mm and/or 16mm motion picture cameras as well as video tape production and projection equipment . In addition, the 'classroom' should contain specimen tables, microscopes, pollution testing devices, geologic survey maps, and hiking-camping gear as well as first aid equipment .

Students can be transported to a natural or social environmental setting and then allowed to conduct and record their study . In this manner, a record of field study activities can be compiled for future reference .

For example, a group of twelve 6th graders are taken to a natural site area located ten miles from the school . Their mission is to identify and collect igneous, sedimentary, and metamorphic rock samples . Equipped with rock hammers, canteens, sample bags, and motion picture and/or video tape equipment, the students strike out on their mission . As the students collect samples, the activities are recorded (in this instance-on video tape) . Once the samples have been collected and classified, the study group returns to the classroom van . On the way back to the school, the video tape of the field study is screened . In this way, the post-study tape provides the basis for immediate activity feedback and follow-up . Back at the school, the taped field study can be used for a variety of activities:

1. Used in classrooms to expose other students to the concept of outdoor education field studies .

2. Expose teachers to the activities of students who are engaged in field studies .

3. Introduce community members to the activities of an outdoor education program - as part of a community orientation program .

In the case of outdoor education field studies and/or field trips, previously filmed or taped activities can be screened in the classroom van for groups going out from the school . This type of 'on-the-road' presentation can arouse student anticipation and heighten interest so that the peak of intellectual and emotional involvement can be achieved immediately prior to the activity and carried over into the experience itself . Again, recordings of these site activities can be played back for students enroute back to the school - thus providing immediate feedback and reinforcement .

C. SOUND FILM AND VIDEO TAPE SIMULATIONS

Simulated field trips and nature studies can be used to enrich student cognition about the environment and to affect their attitudes and values regarding environmental problems . Graphic simulations provide students with vicarious experiences involving natural and social facilities within selected environments .

"Many city children are deprived exposure to varied environmental phenomena. Due to limited funds for extended excursions into urban and rural environmental settings, insufficient numbers of qualified personnel to escort students on field trips, inadequate teacher understanding of the character and nature of the environment, and dangers to the safety and well-being of students, many inquisitive youngsters are denied the opportunity to enrich their perceptions of ecological problems." (1)

In order to fill the void between student cognitive-affective enrichment regarding the environment and exposure to the character of resource phenomena, graphic simulations can be produced and screened in the classroom . In many instances, films and/or video tapes can be made of facilities and locations not readily accessible to students . For example, it may be desirable to develop student awareness and understanding of the manufacturing process . Due to the nature and structure of this process and these types of facilities, it might not be possible to provide students with direct exposure . In this instance, these facilities could be filmed and/or taped and these productions then screened in the classroom . As a result of viewing and discussing these 'tours', students gain a sense of exposure to desired sites and can develop awareness and understanding of phenomena .

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(1) Richard O. Peters, "Environmental Enrichment and Media: SIM-TOUR Films," EDUCATIONAL TECHNOLOGY, October 1971, p.69 .

The Sony Corporation has developed portable video tape equipment that can be operated on either battery power or AC current . The VideoRover II package; camera, zoom lens, videocorder, and battery, weighs approximately eighteen pounds and can easily be strapped on the back and taken outside the school to record activities and experiences .

Hand-held motion picture cameras and 35mm slide cameras can be used to graphically record phenomena for classroom screening . In the case of motion picture cameras not equipped to record natural sounds, portable cassette or reel-to-reel tape recorders can be used .

"Research studies indicate that films bring learners into direct contact with objects and produce impressions of real-life situations. Film exposure affects learning and retention and also helps students with relatively low verbal aptitudes profit by the addition of images to verbal presentations. Films have a marked effect on student retention of knowledge of factual material. The inclusion of color and natural sound provides a close approach to subjective reality in a vicarious experience." (2)

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(2) Richard O. Peters, THE UTILIZATION OF FIELD TRIPS AND SOUND FILM SIMULATIONS TO AFFECT STUDENT COGNITION AND CONCEPT DEVELOPMENT, unpublished doctoral thesis, The University of Rochester, Rochester, New York, 1971 .

D. GAMES AND SIMULATIONS

The principal reason for using games in the learning process is to create a laboratory-oriented environment; an environment wherein students can conduct experiments, formulate hypotheses, and evaluate activities .

Simulations can take the form of gaming devices, motion pictures, video tapes, and role playing . The purpose of these simulation techniques is to provide students with vicarious experiences which represent real-life situations . Working with simulation techniques, students gain exposure to natural and social environmental settings .

Motion pictures, slide presentations, and video tapes can bring the out-of-doors into the classroom . Thus, students can gain vicarious exposure to a wide variety of phenomena .

Today, there are several games and simulations to be found on the market that can be used in elementary and secondary grade classrooms . These devices can be used as:

1. pre-activity orientation: Before direct exposure to a setting, students acquaint themselves with the procedure and activity.
2. learning experience: In instances where students cannot gain direct experience the device is used as a substitute.
3. post-activity follow-up: After a direct experience has been completed, students apply their knowledge and/or skills to the device in order to evaluate the experience.

Games and simulations are effective teaching devices because they possess combinations of the following qualities:

1. highly motivating
2. communicate concepts and facts
3. represent real-life situations
4. provide students with realistic roles, problem solving situations, decision making opportunities, and immediate feedback .

E. FIELD TRIPS - HIKING TRIPS - CAMPING TRIPS

For decades, field trips have been employed in elementary and secondary educational programs for purposes of enabling students to gain contact with life outside the school .

Through hiking and camping trips, students gain direct exposure to natural environmental settings . Activities might be confined to nature trail studies or student groups might cut trails through the wilds and strike camp in virgin terrain .

All of these techniques strive to bring students into direct contact with natural and/or social environmental settings for purposes of affecting student awareness and concept development .

Field trips can be of two types; walk throughs or excursions . Walk throughs are trips usually conducted within walking distance of the school . Excursions, on the other hand, can range from several feet to several miles away from the school . These excursions might take several hours, a full day, or a weekend to conduct and complete .

Irregardless of the nature of the field trip, there is a prescribed procedure that enhances the cognitive and affective qualities of these out-of-school activities .

1. Pre-planning: Prior to going out into the environment, the teacher introduces students to the characteristics of the site and relates the upcoming activity to in-class instruction .

2. Trip/Excursion: Trip groups should be kept to a size of 6-10 students and accompanied by two chaperones . The out-of-school activity should relate to learning activities and experiences that have previously or will shortly be taking place in the school . In short, the activity must serve some instructional purpose !

3. Follow-up: After the completion of the out-of-school activity, attempts should be made to dovetail that experience with in-class activities . The teacher should help guide the students in developing the relationship(s) between the out-of-school and in-school learning activities .

Good outdoor education is related directly to the community by taking students into the environment - when appropriate . Community natural and social environmental sites offer opportunities for first-hand learning .

Field trips and hiking/camping trips provide an excellent basis for peer teaching . Students from upper secondary grades can be introduced into the lower grades for purposes of chaperoning field trips, guiding hiking trips, and instructing students in areas related to their direct and vicarious environmental experiences . To enable older students to work with youngsters, they should receive training in first aid, trail procedures, group leadership, campsite development, and instructional media . This training can be accomplished with the development of a weekend workshop program .

COMMENTS

There is a wide variety of instructional techniques that teachers can use when developing an outdoor education or environmental education program .

The prime purpose of any outdoor education program is to expose students to aspects of life-space natural and social environments . It is preferred that students be provided with the opportunity to gain direct environmental experiences but, in case this degree of exposure is not attainable, there are simulation activities that can be used for purposes of affecting student exposure and concept development .

We should not overlook the resources of the school library, the school media center, and educational television facilities when planning an outdoor education program . These facilities and materials can form the basis of a system-wide resource center .

The purpose of an outdoor education or environmental education resource center is to gather, organize, and disseminate teaching-learning materials and instructional media . There are many ways in which a resource center can contribute to the successful implementation of an outdoor education program .

1. A curriculum resource center for teachers .
2. A repository for professional periodicals and books .
3. A stockpile of instructional materials .

In short, any and all instructional materials and literature to be found in the school can and should be incorporated into the development of an outdoor education program .

Outdoor education IS NOT a course - but rather an instructional strategy that should compliment existing curricula and should be dovetailed with several academic courses-of-study . The value of any outdoor education program is found in its capability for integration into existing programs - and not in its structure and content; a structure and content that might well exist in isolation of other learning experiences - if allowed to do so .

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